**University of Mindanao**

**Bolton St., Davao City**

**NATURAL SCIENCE 2 (PHYSICAL SCIENCE)**

**2nd Term 2nd Semester - A.Y. 2011-2012**

**Student Guide: How to Do a Science Fair Project**

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**What is a Science Fair Project?**

A science fair project is simply your independent research of a science topic using the scientific method. All work and ideas are yours, giving you “ownership” of the research problem and results. By doing a science fair project, you will find yourself doing the job of a practicing, professional scientist; giving you a taste of how the body of knowledge we call science is accumulated

**Why do a Science Fair Project?**

Doing science fair project requires using the skills gained in various subject areas such as Social Studies, English, Math, Technology, the Arts, and the Sciences, making a science fair project an interdisciplinary activity. Science fair projects provide opportunities to collaborate with many teachers, especially in Math and English, and implement cross-curriculum, or team leadership and cooperation.

A science fair project allows you to pose your own question and answer it. Doing a science fair project involves developing and “owning” the question; researching literature; forming a hypothesis; designing an experiment; gathering and organizing the data; analyzing, graphing, and discussing the data; making a conclusion; writing the literary and research reports; and making an oral and visual presentation. Therefore, you develop and apply skills in literary and laboratory research, statistical analysis, and public speaking, while gaining a sense of empowerment and building self-esteem. Because science fair projects are actually cross-curriculum projects that train you for real-life problem solving, the science fair project integrates all aspects of your education and helps to prepare you for real-world job assignments. Having completed a science fair project, you will have the skills necessary to design future investigations in a variety of different fields. A science fair project may become the impetus for a future career.

Science fair projects are fun and filled with self-discovery. When beginning the process, you may feel overwhelmed at its enormity, however you will experience tremendous growth and fulfilment as you progress through the steps and are evaluated by peers, teachers, and judges. This experience builds self-confidence and often enables you to present ideas to others in various situations, such as college and job interviews.

**Steps in Doing a Research Project**

**1st Step – Choosing a Topic**

Before choosing an idea from your brainstorm, you need to be aware of three different categories - your idea should fall into one of these:

1. **Experimental Research**: a project that involves a controlled experiment

e.g. which brand of battery lasts the longest

2.**Technology Development**: this is where your idea involves creating or designing something to help people or make life easier:

e.g. inventing a new, more user-friendly mailbox

3.**Research to increase knowledge for environmental or social systems**: this is where your idea is tested by gathering and analysing data instead of using controlled experiments, such as doing a survey.

After you have brainstormed some ideas, look at each of them and ask yourself:

1. Does my idea fall into one of the three categories? Which one?

2. Can I design a method that is feasible?

3. Can I finish the project within a few months, in order to meet the deadline?

4. If I have to buy equipment to do the project, will it be cheap?

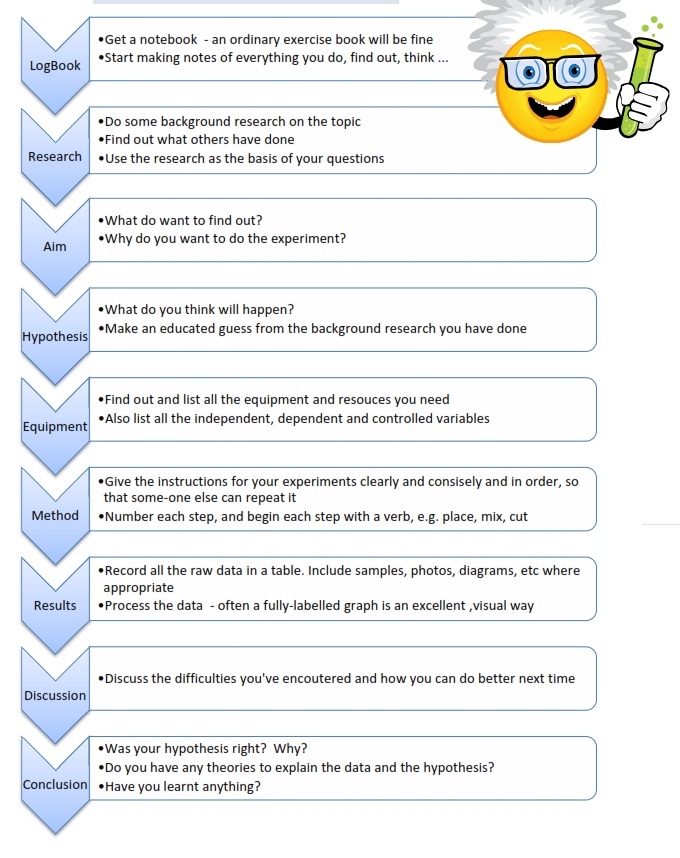
5. Is the project appropriate for my year level?

6. Will I really enjoy finding out the answer or the solution?

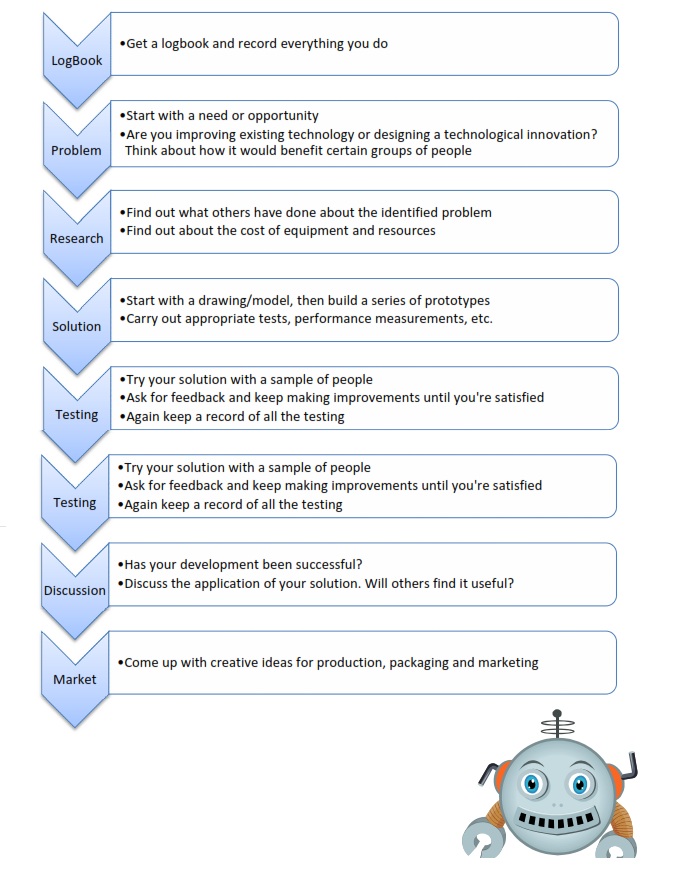
You can also browse the net, discuss with your teachers, parents and friends. Seek advice from experts. When you answer ‘yes’ to all six questions and are satisfied with the idea, then use that as the topic of your project.

**2nd Step – The Design Process**

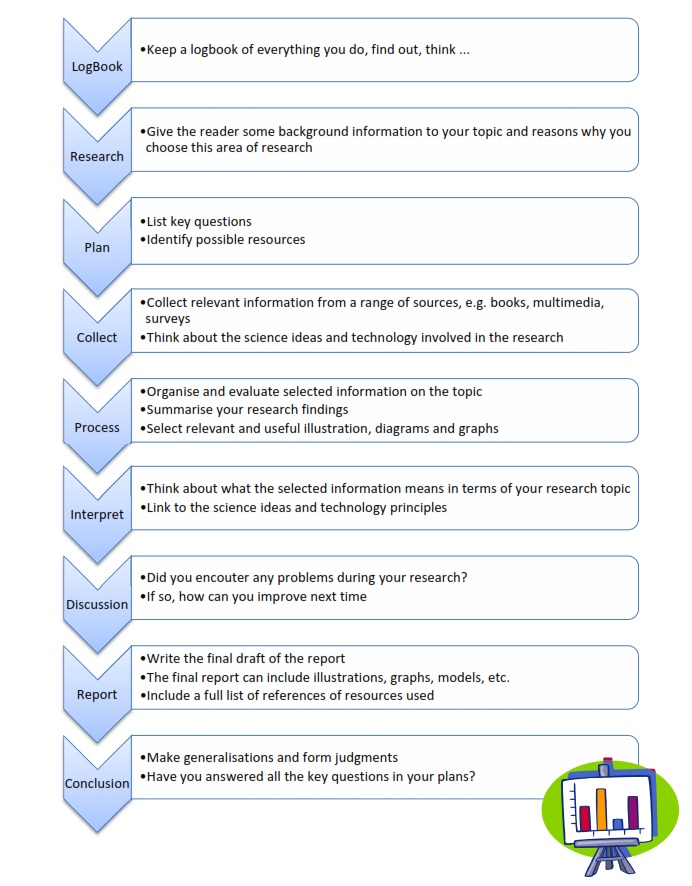
**For the Experimental Project**



**For Technology Development Project**

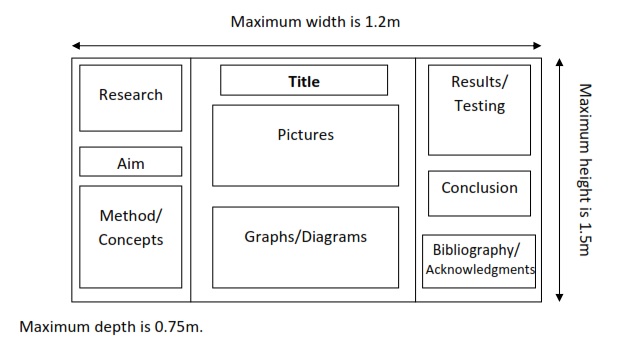


**For Research Project**



**3rd Step – Presentation**

After doing your project you need to create a poster presentation. Be as creative as you can when putting the information on the poster. Include pictures, charts, diagrams and even your model or a small demonstration in front of the board. To give you an idea of how to start, have a look at the figure below and see how different sections are typically arranged.



Your posters will be displayed in a designated area of the campus. Further information will be given. If there is no available area, we will make use of our room and make sure that you will invite some of your friends and share to them your project.

**TIME TABLE OF THE SCIENCE FAIR PROJECT**

|  |  |
| --- | --- |
| **DATE** | **ACTIVITY** |
| **February 6-10, 2012** | **Group Task**  Click the Project Menu. After you were assigned in your group start writing and editing the following:  **For Experimental research**   1. Title of the topic 2. Introduction (3 paragraphs) – discuss what others have done and pose your question 3. Purpose of the study (refer to the design process outline) 4. Hypothesis (refer to the design process outline)   **For Technology development**   1. Title of the topic 2. Introduction (3 paragraphs)(refer to problem and research section of the design process outline)   **For Research**   1. Title of the topic 2. Introduction (3paragraphs) (background information of the topic and reasons of choosing the topic) 3. List the key questions |
| **February 13-17, 2012** | **Individual task.**  Choose two groups and give your insights and suggestion to the chosen topic by clicking the discussion post icon in our wikispace. |
| **February 20-24, 2012** | **Group task.**  Be sure to write the following in our wikispace.  **For Experimental research**   1. Write the equipment and method. (refer to design process outline)   **For Technology development**   1. Draw the model of your technology and create your prototype (post the picture)   **For Research**   1. Do the collection and processing of your resources. (refer to design process outline) |
| **February 27-March 02, 2012** | **Group task.**  Be sure to write the following in our wikispace.  **For Experimental research**   1. Do experimentation (pictures)   **For Technology development**   1. Test your model (pictures)   **For Research**   1. Do interpretation of the information |
| **March 6-9, 2012** | **Group task.**  Be sure to write the following in our wikispace.  **For Experimental research**   1. Discuss your result (include citation) and make conclusion   **For Technology development**   1. Discussion with citation (refer to design process outline) 2. Market   **For Research**   1. Discussion with citation (refer to design process outline) 2. Write the final draft of your report and make conclusion |
| **March 13-17, 2012** | **Start doing your poster presentation (post picture)** |
| **NOTE: This timetable is a guide so that you can maximize your time. You can do the task if possible ahead of time to avoid any delay.**  **Good Luck and Enjoy!**  **Cheers:**  **Riza☺** | |